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UNIT TRUST IN MALAYSIA

CAN IT OUTPERFORM THE MARKET

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UNIT TRUST IN MALAYSIA
CAN IT OUTPERFORM THE MARKET

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The undersigned certifies that the above candidate has fulfilled the conditions of the project paper prepared in partial fulfillment of the requirement for the Master of Business Administration (MBA).

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Abstract

This paper examines empirically, the performance of 13 unit trust funds in Malaysia from January 1992 to December 1996. This was conducted within the framework of Arbitrage Pricing Theory (APT) and Capital Asset Pricing Model (CAPM). Four economic factors were included in the study within the APT framework They are tested for significance in determining investment return of 13 of the unit trusts The unit trusts were ranked according to three indicators adjusted Sharpe Index, adjusted Jensen Alpha and Treynor Index

The data was also grouped into two sub-periods January 1992 to June 1994 and July 1994 to December 1996 Same types of tests have been conducted on the two sub-periods The findings revealed that most of the unit trust funds sample could outdo the market portfolio during the first sub-period and the full period. However, both the APT model and CAPM model were not appropriate in the second sub-period

Chapter 1

1. Introduction

Unit trust industry in Malaysia which took off in 1993, has been introduced in Malaysia since the sixties This was coincide with the super bull run of the Malaysia Stock Market in 1993. Rational people have been talking about the performance and returns of the unit trust as compared to the stock market Topics included in their dicussions are where they should invest their money; whether in the stock market or unit trust The local advertisements by unit trust management companies have been emphasizing on the excellence performance of their products However, this is in contrast with the research studies conducted by Asian & Western scolars.

The objectives of this paper is to study the performance of unit trust in Malaysia with KLSE CI chosen to represent the market. Chapter 2 gave an overview of unit trust, especialy those in the Malaysia's financial market Previous researches from both the Western & Asian countries were reviewed too. At the end of the chapter, the objectives of the study were stated.

Chapter 3 elaborated the method of selecting unit trust samples and economic variables for this study Unit trust prices ranges from 1992 to 1996 was obtained for the study The study also further break down the data into two subperiod before and after the changes in the unit trust investment guidelines in year 1994, by the Securities Commission, the regulator of the unit trust industry In addition, Chapter 3 also described the methodology used in the research, the formula to obtain monthly rate of return and the hypothesis used in the study.

Chapter 4 illustrated the test results obtained from the two methodologies over the full period and both the subperiods Discussion on the research findings and comparisons among previous researches were included in the chapter too.

Lastly, chapter 5 summarized the entire research paper.

2. Review of literature

2.1. Overview of unit trust

Unit trust and mutual fund are types of investment funds They are the investment schemes or the legal vehicles that pool money from investors and invest them in company listed in KLSE, money market instruments, government securities, corporate bonds and etc. Investing in unit trust or mutual fund is becoming a trend in the society where individual investors take it as an investment alternative to earn extra income. Unit trusts are also called 'open-end' funds, as the unit holders can sell back their units to the fund management company at the prevailing buying price at any point of time. In addition, fund management companies could also issue new units to incoming investors when necessary

A unit holder subscribes to Units in the Trust, which share equally with other unit holders in the Trust Fund He will benefit from the following

1 earning potential as a large-scale investor
2. spread out or diversify the investment risk over a broad selection of counters
3 relief from administrative burden and time spent in direct research, trading and managing funds
4. assistance from professional management of Fund to unsure reasonable returns
5 high liquidity as the Trust Manager are obligated to repurchase their units

Unit trust and mutual fund companies play a very important role in Malaysia's capital market, too They are the major players in the market and believed to

have the influencing power to attract small investors to the capital market Unit trust fund management companies have been mushrooming in the country since the past few years This created the intense competition among themselves in the unit trust industry As such, more innovative unit trust products have been developed to attract investors Advertising is one of the promotion strategy to increase their publicity, that is, to highlight their investment performance and benefits.

2.2. Unit Trust Funds In Malaysia

Unit trust funds in Malaysia are categorized by their objectives of funds and targets where funds are invested. Unit trust funds may be invested in property, equities or common stocks, fixed interest financial instruments (bond) or Islamic equities As such, they are also called property funds, equity funds, bond funds, Islamic funds and state funds.

Unit trust funds are further classified into different risk categories to cater for investors with different risk tolerance levels Investor would then select a fund with risk level matches their investment objectives. Of course, the higher the risk the investor selected, the greater the return would be expected. The unit trust funds categories are money market funds, bond funds, balanced funds, income funds, growth and income funds, growth funds, aggressive growth funds Refer to appendix B for details of unit trust funds categories.

Most of the funds are managed by Malaysian companies and invest in local and overseas equities. However, there are also foreign domiciled unit trust funds which arre managed by foreign companies but invest in Malaysian equities, Singaporean equities or other East Asian countries (ASEAN) equities. Appendix C gives a list of such trust funds which have been traded in Malaysia

Many studies have been conducted by current scholars on the past performance of unit trusts or mutual funds in the Western countries. These have been facilitated by the availability of benchmark measure like stock indices. There are also similar interest in the development of the local unit trusts due to the rapid growth of the Asian financial industry. A number of researches have been conducted on their performance and operation of unit trust funds in the Asian countries.

2.3. Studies from Western countries

William F Sharpe (1966) had conducted a study on thirty-four open-end mutual funds in United States in the period 1954 to 1963 He introduced the Sharpe Index to compute the Reward to Variability ratio for all his mutual fund samples and compared them to Dow Jones Industrial Average (DJIA) which represents the market The findings showed that, on the average, mutual fund did not out perform the market. Only 11 out of the 34 mutual funds performed better than DJIA. Sharpe also showed that good performance was associated with low expense ratio; the size of fund per se is unimportant to predict future performance.

Michael Jensen (1969) examined the performance of 115 open-end mutual funds in the period 1955 to 1963. He estimated the position of the security market line for the period using the Standard & Poor's Index of 500 stocks as proxy for the market portfolio Jensen measured the performance of each mutual fund by using the vertical distance between the position of each fund and the Security Market Line. This benchmark or Jensen Index assumed that the securities are priced according to the Capital Asset Pricing Model In addition, Jensen also computed a beta factor for each fund by regressing its rates of return in the ten year period to the S&P index portfolio On average, Jensen concluded that the mutual funds were under-performed and the source of the under-performance was the expenditures of funds associated with the management of the funds.

Nai-Fu Chen (1983) applied daily returns (adjusted for all capital changes and dividends) of 180 stocks during period 1963 to 1978 Based on the previous studies done by Roll and Ross[1] and Reinganum[2], five factors were selected. Brown and Weinstein[3] also confirms that the number of pervasive factors is probably no greater than five. He compared the empirical performance on the APT and that of the CAPM implemented by market indices and found that the APT performs well. In addition, the study pointed out that the expected returns depend on the estimated factor loadings; and the characteristics of the firms do not contribute any explanatory power to that of the factor loadings.

[1] Roll & S. Ross, "An Empirical Investigation of the Arbitrage Pricing Theory", Journal of Finance 35 (1980), 1073 - 1103.

[2] Marc Reiganum, "The Arbitrage Pricing Theory: Some Empirical Results", Journal of Finance 36, (1981), 313 - 321.

Bruce N Lehmann and David M Modest (1987) employed the standard CAPM benchmarks and a variety of APT benchmarks to investigate whether the abnormal mutual fund performance is sensitive to the benchmark chosen in study The study has examined the returns of 130 mutual funds over the period January 1968 through December 1982 Three conclusions were made:

1 Jensen measures and Treynor-Black appraisal ratios of individual mutual funds are quite sensitive to the method used to construct the APT benchmark.
2. The rankings of the funds are less sensitive to the exact number of common sources of systematic risk.
3. There are considerable differences between the performance measures yielded by the standard CAPM benchmarks and those produced with the APT benchmarks.

Robert W Faff (1988) conducted an empirical test of Arbitrage Pricing Theory (APT) on Australian Stock Returns in the period 1974 to 1985. The analysis took 140 Australian equities over a 12 year period and concluded that a 3-factors model performs reasonably well against the CAPM.

Mark Grinblatt and Sheridan Titman (1993) also introduced a new measure of portfolio performance and applies it to study the performance of a large sample of mutual funds. In contrast to previous studies of mutual fund performance, the measure used in this study employs portfolio holdings and does not require the

[3] In his paper "A New Approach to Testing Asset Pricing Models: The Bilinear Paradigm." Journal of Finance, 38 (1938), 711-743.

use of a benchmark portfolio It finds that the portfolio choices of mutual fund managers, particularly those that managed aggressive growth funds, earned significantly positive risk-adjusted returns in the 1976 to 1985 period

Mark Grinblatt and Sheridan Titman's study (1994) contrasted the Jensen Measure for 3 major controversy, benchmark efficiency, timing and statistical power It empirically assesses the importance of each of these three issues by studying the performance of a sample of 109 passive portfolios constructed from securities characteristics and industry groups, as well as a sample of 279 mutual funds The study found that the measures generally yield similar inferences when using the same benchmark and that inferences can vary, even from the same measure when using different benchmarks The paper also analyzed the determinants of mutual fund performance, such as fund characteristic like Net Asset Value, load, expenses, portfolio turnover and management fees The tests suggested that turnover is significantly positively related to the ability of fund managers to earn abnormal returns

Dr. Jonathan Fletcher (1997) examined the performance of a random sample of 101 unit trust in United Kingdom within an APT framework. Monthly return data obtained for the period January 1980 to December 1989 The study considered the relationship between performance and a number of trust characteristics. Three APT benchmark portfolios were used in the study. On average, the sample unit trusts were not able to out perform any of the three benchmarks. The paper also found that there is insignificant relationship between the three benchmark factors and the investment objectives of funds or sizes.

2.4. Studies from Asian countries

Francis Koh also conducted another study with Koh Seng Kee and Cheng Tai Chin using data from January 1980 to December 1984 for all the 19 unit trusts in Singapore The market portfolio was proxied by the SES All-Share Index too The research discussed the performance of unit trusts from the point of return-risk characteristics with objectives, diversification, unit trusts' performance as compared to market portfolio It was concluded that, all the unit trusts in Singapore tended to under perform the market, poorly diversified and performance was not consistent over time

Francis Koh, Tan Juay Miang and Phoon Kok Fai (1989) from Singapore studied the four investment trusts listed on the Singapore Stock Exchange (SES) by comparing with the market portfolio, which was proxied by the SES All-Share Index These are the only four closed-end funds in Singapore as at end of 1987 Period being analyzed are from January 1978 to December 1987 The data were regressed to obtain standard deviations and betas of the funds. By using, Sharpe, Jensen and Treynor indexes, the research concluded that three out of four investment trusts did out perform the market portfolio even though all of the trusts bear systematic risk close to that of the market portfolio. The research also found that, the degree of diversification achieved by the trusts were fairly low and there were no significant difference in performances between the more aggressive trusts and the less aggressive trust.

Tan Hoon Chuan investigated the investment performance and ranking of a sample of 21 unit trusts in Malaysia for the period January 1984 to December 1993 The findings revealed that the funds as a whole performed worse than the market portfolio, proxied by KLSE CI In general, the research also found that, most of the investment funds were well-diversified portfolios, but did not adhere well to their stated objectives The fund managers could not forecast security prices, fund characteristic and expense ratio have negative correlation with investment performance

Shamsher Mohamed and Annuar Mohd Nassir[4] have done a research on 54 Malaysian unit trusts for the period of 1988 to 1992. These were used to compare to the benchmark, the KLSE Composite Index (CI). Betas of unit trusts were estimated by regressing the returns of unit trusts against the return of KLSE CI Using R-square statistic, adjusted Sharpe Index method, few conclusions have been drawn. That is, the returns of investment of unit trusts and the degree of diversification of portfolios were well below the risk-free asset and market returns, and the risk characteristics and return of the funds were inconsistent with their stated objectives.

In general, the evidence from the research of the performance of the unit trusts and the developed markets in both the Asian and Western countries show that investors in unit trusts do not earn the expected returns. The investors would be

[1] Shamsher Mohamed & Annuar Mohd Nassir. "The Performance of Unit Trusts in Malaysia: Some Evidence", Capital Market Review, Vol 3, No 2, 1995, 51 - 69

better off if investing and holding their money in a portfolio that replicates the market portfolio

2.5. Research objectives

The objectives of this study are

1 To evaluate the performance of unit trust, whether it could out perform the market portfolio proxied by KLSE Composite Index and the risk free asset in Malaysia.

2 To evaluate the performance of unit trust in Malaysia before and after 19th March 1994 when Securities Commission announced the new guidelines and regulations for unit trusts.

3 To rank the performance of the unit trust funds in Malaysia.

4 To address the problems of differences in performance measurement This includes the differences between the performance of investment return claimed by the unit trust fund management and the result of the study to be conducted

3. Data & methodology

3.1. Fund selection

In this research, we consider Malaysian domiciled equity funds only, whereby the equity funds could be compared with KLSE Composite Index (CI), which was identified as the proxy for market Local domiciled funds are used as they are governed by the unit trust regulations as defined by Securities Commissions in Malaysia. With this, we could observe the impact on performance due to the amendments of guidelines on unit trust funds in October 1994.

Islamic funds were excluded from the research as the basis of its investment strategy is to buy and hold 'halal' stocks only 'Halal' stocks setup are based on Syariah principles and are determined by Securities Commission from time to time Currently, the number of 'halal' stocks in KLSE is less than half of the total number of listed company (approximately 400 stocks compared to a total of 920 stocks listed in KLSE) As such, the choice of target investment for Islamic funds is not as much as other equity funds Bond funds and property funds were also excluded from the research as they are the more specialized funds that only invest in fixed income financial instruments and in property industry.

As at to-date, there are 28 unit trust management companies managing more than 70 funds in Malaysia. Some of these funds are launched since the commencement of unit trust industry in Malaysia, approximately in the late 60's. However, most of them are launched in the 90's as the industry was taken off in 1993. Similar to Jensen (1968) estimation performance, trust performance with reasonable

accuracy would require a minimum of two years continuous return data This paper took 5 years monthly data from 1992 to 1996, thus, funds launched after 31st December 1991 would not be considered This is also to maintain the common base years for all the trust funds to exist in the market and transacted daily during the 5 years selected None of the funds selected has gone through new incorporation, merger, takeovers, liquidation or delisting during the life span. As such, 13 funds out of a total of 79 funds in the local unit trust industry met the criteria above and selected to be studied in this research The list of these unit trust funds has been included in appendix D.

The major constraints imposed on the current research effort is the quantity and quality of readily accessible data. There is no standard data available for local unit trust industry. Five years of return data used in this research ranges from 1st January 1992 to 31st December 1996 inclusive of the monthly closing prices and dividend distribution rates They were obtained from local newspapers, funds prospectus and the fund management company's annual reports. Permodalan Nasional Berhad (PNB) and Federation of Unit Trust Managers (FMUTM) have a good collection of daily closing prices and information related to the unit trust industry in Malaysia, such as, fund prospectus, newspaper cutting and magazines related to this industry

3.2. Unit trust sample data

The monthly closing prices are then adjusted for all capital changes to arrive at the monthly return of the unit trust funds. The monthly return obtained was

regrouped into 2 sub-periods, which make up the full period. The two sub-periods are from 1st January 1992 to 30th June 1994 and 1st July 1994 to 31st December 1996, hence the full period begins at 1st January 1992 to ends at 31st December 1996 The objective of this is to track the unit trust performance for the full period, and to contrast the impact to the unit trust performance due to the amendments of the unit trust guidelines in the year 1994 Refer to Appendix A for the details of the amendments.

The amendments of the unit trust guidelines have been announced after the stock market crash at the end of year 1993. The amendments have the following objectives .-

1. Allow the unit trust management companies to have the flexibility of earning higher return. This is to achieve through the increased of fund size, widened of investment portfolio to invest in securities listed on a foreig stock exchange, inreased of amount invest in non-trustee securities, unlisted loan stocks, bonds and soon to be listed securities.
2 Enable the unit trust management companies to compete with foreign fund manager.
3 Allow fund managers to take advantage of the economic of scale in fund management
4. Even out risk between KLSE and other bourses.
5 Reduce unhealthy and speculative investment on stock market.
6 Allow unit trust management companies to link with banks and other finance institution for group promotion and joint investment.

7 Flexibility in advertising code for the unit trust industry in order to increase investors' awareness

3.3. Variables selection for Arbitrage Pricing Theory

The return of individual unit trust depends on a variety of anticipated and unanticipated events Anticipated events are usually incorporated by investors into their expectations of returns on individual unit trusts and thus incorporated into the unit trust prices. However, most of the return realized ultimately will be the result of unanticipated events. The common economic factors influence the investors' expectations about the future and form the factors of the APT variables. Such economic factors are.

1 Levels of real Gross National Products, represented by Index of Industry Productivity (IP)

2. Real interest rates, i e , 3-month KLIBOR rate

3 Levels of inflation, represented by Consumer Price Index, CPI

4 Foreign exchange rates, represented by MYR/USD.

Due to the unavailability of CPI and IP data computed at the same base year for the period of study, CPI and IP used in this study has been captured as it is available in the Bank Negara Malaysia Quarterly Economic Bulletin. That is, CPI for the year 1992 and 1993 computed with the base year of 1990 and CPI for year 1994 to 1996 computed with the base year of 1994. IP for year 1992 to 1994 computed with the base year 1988 and IP for year 1995 and 1996 with the base year of 1993.

3.4. Continuously compounded rate of return

Jensen (1969) showed that the Capital Asset Pricing Model (CAPM) holds for any arbitrary length of time as long as the returns are expressed in terms of the proper compounding interval. This horizon interval is instantaneous, that is the interval is infinitesimally small and that the natural logarithm form of the returns provides a very good approximation of reality Thus, the monthly portfolio returns calculated for the 13 sample unit trust funds are based on this continuously compounded method that was adopted by Jensen (1968) :

$$Rp_{i,t} = \ln \left[\frac{P_{i,t+1} + D_{i,t}}{P_{i,t}} \right]$$

where

$Rp_{i,t}$ = The monthly continuous compounded rate of return of the i^{th} unit trust/portfolio during the month t

$P_{i,t}$ = Price of unit trust i during month t

$D_{i,t}$ = Dividend per unit paid by unit trust i during month t (assumes that dividends are reinvested at month end).

The return on the market portfolio is measured as follows :

$$Rm_t = \ln \frac{I_{t+1}}{I_t}$$

where

Rm_t= The monthly continuous compounded rate of return of the KLSE Composite Index during the month t

I_t = KLSE Composite Index during month t

3.5. Methodology- Arbitrage Pricing Theory Method (APT)

This paper examines empirically, the performance of a sample of 13 unit trust in Malaysia whether it out performs the market (with CI as the proxy of the market). This is to be done within the framework of Arbitrage Pricing Theory (APT). The study would also evaluate the performance of sample within the framework of Capital Asset Model Pricing (CAPM). Both of these results would be compared, and the more efficient framework will be used in studying the Malaysian sample

Ross (1976) developed the APT by assuming that asset returns follow a linear K factor model as.

$$R_{i,t} = E(R_{i,t}) + b_{i,1} f_{1,t} + \ldots + b_{i,k} f_{k,t} + \varepsilon_{i,t}$$

where

$R_{i,t}$ = the return of asset i in period t

$E(R_i)$ = the expected return on asset i

$b_{i,1}, \ldots, b_{i,k}$ = are the sensitivities of asset i to each of the k factors

i = $1, \ldots k$

$f_{1,t}, \ldots, f_{k,t}$ = the factor realizations in period t on each of the k factor

$\varepsilon_{i,t}$ = a random error term of asset i in period t.

Assume,

$E(\varepsilon_{i,t}) = 0$, $E(f_{i,t}) = 0$ and $E(\varepsilon_{i,t}, f_{i,t}) = 0$ for all i.

Connor (1984) shows in his competitive equilibrium version of the APT that

$$E(R_i) = \lambda_0 + \lambda_1 b_{i1} + \lambda_2 b_{i2} + \ldots + \lambda_k b_{ik}$$

where

$\lambda_1, \quad , \lambda_k$ = risk premiums of each of the k factors,

λ_0 = the return on a zero-beta portfolio or riskless asset

The Connor's model was extended by Connor and Korajcyzk (1986) to evaluate the performance of managed funds. The result show that, if a riskless asset exists, then the Jensen's (1968) performance measure can be applied to an APT framework as

$$r_{it} = \alpha_i + \beta_{i1} r_{1t} + \ldots + \beta_{ik} r_{kt} + \varepsilon_{it}$$

where

r_{it} = the excess return of the trust i in period t

$r_{1t}, r_{2t}, \quad , r_{kt}$ = the excess returns on the k portfolio benchmark (j=1, ,k) that mimic the unobserved factors

$\beta_{i1}, \quad , \beta_{ik}$ = the sensitivities of trust i to each of the k factor portfolios for i = 1, ,k

ε_{it} = random error term of trust i in period t with $E(\varepsilon_{it}) = 0$

$E(\varepsilon_{i,t}) = 0$, $E(f_{j,t}) = 0$ and $E(\varepsilon_{i,t}, f_{j,t}) = 0$ for all i and j.

3.6. Methodology - Capital Asset Pricing Model Method (CAPM)

Under the CAPM framework, the investment performance measures used to evaluate the unit trust funds are Adjusted Sharpe Index, Adjusted Jensen's Alpha

and Treynor Index Two risk measurements are needed in the above computation

The first measurement of risk, standard deviation can be obtained by the following equation -

$$\sigma_i = \left(\sum_{t=1}^{N} (R_{i,t} - \bar{R}_i)^2 / N - 1 \right)^{0.5}$$

where

$R_{i,t}$ = Rate of return of the i^{th} unit trust at time t

$\bar{R}_i$ = Average of the rate of return for the i^{th} unit trust

N = Number of observations

The second measurement of risk is beta of the unit trust fund which was estimated by regressing the returns on a unit trust fund with the returns on the KLSE CI (the proxy for the market portfolio) The beta statistic measures the market risk of a diversified portfolio, historical volatility or responsiveness of the unit trust to changes in the market index

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + e_{i,t}$$

where

α_i = Regression intercept

β_i = Slope of characteristic line

$R_{i,t}$ = Return on i^{th} unit trust in month t

$R_{m,t}$= Return on market portfolio in month t

$e_{i,t}$ = Regression's random error term of trust i in period t

with $E(e_{i,t}) = 0$

Adjusted Sharpe Index which was introduced by Jobson and Korkie (1981) has the aim of overcoming the biased measure of Sharpe Index introduced by Sharpe The traditional Sharpe Index measures the excess return per unit of total risk The higher the index value of the portfolio, the more desirable is the portfolio

$$SI = \bar{R}_i - \bar{R}_f / \sigma_i$$

where

SI = the traditional Sharpe Index

$\bar{R}_i$ = the average return on i^{th} portfolio / unit trust.

$\bar{R}_f$ = the average risk-free interest rate using 3-month treasury bill rates

σ_i = the standard deviation of the unit trust's annual return

The adjusted Sharpe Index is computed as -

$$SSI = SI [N / (N + 0.75)]$$

where

SSI = the adjusted Sharpe Index

SI = the traditional Sharpe Index

N = the number of return intervals / observations

Jensen ex-post alpha measures the size of abnormal returns achieved by the unit trust A positive alpha value indicates that the portfolio achieves higher return than a benchmark portfolio with the same degree of riskiness. Jensen's alpha is obtained from the regression intercept of the following equation .-

$$R_{i,t} - R_{f,t} = A_i + B_i(R_{m,t} - R_{f,t}) + U_{i,t}$$

where

A_i = Traditional Jensen alpha / regression intercept

B_i = Slope of characteristic line

$R_{i,t}$ = Return on i^{th} unit trust in month t

$R_{m,t}$ = Return on market portfolio in month t

$R_{f,t}$ = Risk free return in month t

$U_{i,t}$ = Residual risk premium for i^{th} unit trust at time t which is unexplained by the regression, with $E(U_{i,t}) = 0$

However, traditional Jensen alpha measure does not allow for comparison of performance of portfolios. This may due to different portfolios may have different levels of systematic risks So, Adjusted Jensen alpha is used.

Adjusted Jensen's Alpha = A_i / B_i

where

A_i = Traditional Jensen's Alpha of i^{th} unit trust

B_i = Beta of i^{th} unit trust

The Treynor Index measures the excess return per unit of systematic risk The higher the index value of the portfolio, the more desirable is the portfolio Treynor's performance measure is appealing in the sense that it shows that when an asset is part of a large investment portfolio, it's mean excess return (R_p - R_f) should be weighed against its systematic risk (as measured by beta) rather than against total diversifiable risk (as measured by standard deviation). Therefore, Treynor Index formula is similar to Sharpe Index formula but replaces the standard deviation used in Sharpe Index, σ with beta of unit trust, β.